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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,402	10/12/2001	Teruyuki Nakano	E HAR0010	9182
7590	04/07/2004		EXAMINER	
J C Patents Inc Suite 250 4 Venture Irvine, CA 92618			MACARTHUR, SYLVIA	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/856,402

Applicant(s)

NAKANO ET AL.

Examiner

Sylvia R MacArthur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/12/01 *bm*
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

2. Claims 1, 3, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Dryer et al (US 5,128,281).

Regarding claim 1: Dryer teaches a rotary mechanism (clamping plates 12) holding a wafer 10 while rotating it in a prescribed direction. A rotary body (roller 15) which rotates relative to the semiconductor wafer while maintaining a gap from the periphery of the wafer, See Fig. 1. A polishing solution channel holes 20) and polishing solution supply portion (dispenser 19) are also provided.

Regarding claim 3: The rotary mechanism holds a plurality of semiconductor wafers in a stacked state, according to the illustration of Fig. 1 and col. 2 line 29.

Regarding claim 4: Dynamic pressure generating grooves 16 are formed on the peripheral surface of the rotary body facing the periphery of the wafer.

Claim Rejections - 35 USC § 102

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 2, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dryer et al in view of Miyamoto (US 6,280,294).

The teachings of Dryer were discussed above.

Dryer fails to teach a polishing solution tank and a polishing solution circulation portion.

Miyamoto teaches in col. 5 lines 35-44 that the substrates are polishing as they are immersed in an abrasive liquid 3 and that an abrasive liquid flowing hole 23 is provided to circulate the liquid.

Miyamoto teaches that that the immersion while polishing method ensure a high precision, high-efficiency polishing result without damaging the polishing surface as the immersion provides a buffer for the wafers.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide a polishing solution tank and a polishing solution circulation portion.

5. Claims 5, 6, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dryer in view of Miyamoto as applied to claims 2, 7, and 8 above, and further in view of Aguro et al (US 4,426,151) and Mizuguchi et al (US 5,076,026).

The teachings of Dryer and Miyamoto were discussed above.

Regarding claims 5 and 9: Neither teaches a magnet installed in the rotary body and a magnetic polishing solution.

Aguro teaches a magnet installed in rotary body (magnet roller 12).

The motivation to provide a magnet installed in the rotary body is to enhance the polishing effect by introducing s magnetic flux density to the polishing environment.

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Aguro fails to teach a magnetic polishing solution.

Mizuguchi teaches a magnetic polishing fluid in col. 7 lines 31-36. In col. 3 lines 15-21

Mizuguchi teaches that the use of the magnetic polishing fluid provides a magnetic field and introduces a source of vibration to the microgrind the workpiece.

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide a magnet and magnetic polishing fluid in the polishing apparatus resulting from the combined teachings of Dryer and Miyamoto.

Regarding claims 6 and 10: Neither Dryer nor Miyamoto teach that the rotary body is formed of an elastic material. According to the specification page 21 of this present invention such elastic materials that comprise a hardness between 7 and 40 Hs include synthetic resin. Aguro teaches in col.5 lines 50-54 that the material of construction for the scraper member is a synthetic resin. Though Aguro does not specifically teach that the roller is also made of synthetic resin one of ordinary skill in the art at the time of the claimed invention would have chosen synthetic resin as it a suitable material of construction with the desired chemical and physical properties needed for this processing environment.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 8 a.m. and 2 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


April 2, 2004

Sylvia R MacArthur
Patent Examiner
Art Unit 1763